UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/975,960	10/15/2001	Cedric Lapaille	Q66616	1030

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EXAMINER
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ART UNIT	PAPER NUMBER
2645	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/975,960	LAPAILLE ET AL.
	Examiner	Art Unit	
	Matthew W. Genack	2645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☒ Claim(s) *1* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date *15 October 2001*.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Drawings

1.   The Application lacks a drawing, and is therefore in violation of 37 CFR 1.81.

Claim Objections

2.   Claim 1 is objected to because of the following informalities: the word

"preferably" appears in Line 3. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   Claim 4 recites the phrase "claim 3 wherein said equivalent bandwidth" in Line 1.

There is insufficient antecedent basis for this limitation in the Claim. Examiner

interprets this Claim such that the word "equivalent" is not present. Claims 5-7, which

also contain the word "equivalent" and depend on Claim 4, are interpreted such that this

word is not present.

5.   Regarding Claim 6, the phrase "for example" renders the claim indefinite

because it is unclear whether the limitation(s) following the phrase are part of the

claimed invention. Examiner interprets this Claim as if this phrase is missing. See

MPEP § 2173.05(d).

6.   Regarding Claim 8, the phrase "such as a carrier" renders the claim indefinite

because it is unclear whether the limitations following the phrase are part of the claimed

invention. Examiner interprets this Claim as if this phrase is missing. See MPEP

§ 2173.05(d).

7.   Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. There is a missing word between the words "immediately the"

in Line 5, and as a consequence, Claim 11 is unclear. Examiner interprets this Claim

such that the missing word is the word "if."

8.   Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. The word "if" in Line 1 is not matched by the word "then" (or

anything else with an equivalent meaning) later in the Claim. Consequently, Claim 12 is

unclear. Examiner interprets Claim 12 such that "then" is inserted between "verified,"

and "for" in Line 3.

9.   Claim 19 recites the variable α^T_1 in Line 7. There is insufficient antecedent basis

for this limitation in the Claim. Examiner interprets Claim 19 such that "and α^T_1" is not

present.

Claim Rejections - 35 USC § 102

10.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11.   Claims 1, 3, and 14-21 are rejected under 35 U.S.C. 102(e) as being anticipated

by Lucidarme *et. al.*, U.S. Patent No. 6,704,546.

Regarding Claims 1, 18, and 21, Lucidarme *et. al.* discloses a method and

apparatus for the allocation of a transmission frequency within a given frequency

spectrum for use by a telecommunication system (Abstract, Column 3 Lines 63-66,

Column 5 Line 66 to Column 6 Line 3). Said telecommunication system includes a

plurality of terminals and a satellite (Column 1 Lines 20-48, Column 5 Lines 30-32, Fig.

1). The various aspects of a communication are managed according to a quantity, a so-

called decision value, said quantity being proportional to the product of the power and

the bandwidth of the transmission (Column 12 Lines 38-65).

Regarding Claim 3, Lucidarme *et. al.* discloses that if a decision value that is

proportional to the product of power and bandwidth is greater than some maximum

threshold, then new power/bandwidth combinations may be tried, a different frequency

spectrum may be used, or a handover to a cell with better communication conditions

may be performed (Column 3 Line 63 to Column 4 Line 33, Column 12 Lines 38-65).

To achieve a desired bit rate, the power and bandwidth are also chosen in a manner

such that a minimum carrier to interference ratio is maintained (Column 11 Lines 31-50,

Fig. 2b).

Regarding Claim 14, Lucidarme *et. al.* discloses that the telecommunication

system may be a Code Division Multiple Access (CDMA) system (Column 7 Line 58 to

Column 8 Line 34, Fig. 6), wherein the content of the transmissions may be voice,

video, or data packets requiring varying transmission rates (Column 9 Lines 25-26).

The power level is adjusted based on the propagation conditions (Column 9 Line 66 to

Column 10 Line 20, Column 12 Lines 46-52).

Regarding Claims 15-16, Lucidarme *et. al.* discloses the uplink and downlink use

separate frequencies, wherein the frequency allocation manager (FAM) of the base

station and the FAM of the terminal may each select one of these frequencies, and

whereby the FAMs interact with each other in a specific order to establish each

frequency (that is, either the uplink or the downlink is managed first, and then the other

is managed second) (Column 15 Lines 22-49). Thus, the uplink and downlink are

separately managed by two distinct FAMs after the initial connection procedure between

the base station and the terminal (which may be taking place due to a previous terminal

disconnection) is completed.

Regarding Claim 17, Lucidarme *et. al.* discloses that the FAM has the capability

of reducing bandwidth for a communication (Column 12 Lines 38-65), wherein said

communication may be a non-duplex communication whereby the uplink and downlink

center frequencies and bandwidths are identical (Column 15 Lines 22-25).

Regarding Claim 19, Lucidarme *et. al.* discloses the presence of gateway

switches in the telecommunication system (Column 7 Lines 8-35, Fig. 4), whereby said

telecommunication system handles multimedia packets (Column 9 Lines 25-26), and

includes terminals in a plurality of service areas (Column 16 Lines 10-29, Fig. 8). The

telecommunications system includes a central network (Figs. 1 and 3-4). The

telecommunication system includes a connection acceptance control function (Column

8 Lines 35-60), a media access control function (Column 9 Lines 25-26), and means for

adjusting powers and bandwidths based on the aforementioned decision values

(Column 12 Lines 38-65).

Regarding Claim 20, Lucidarme *et. al.* discloses a FAM that is located centrally

within the network and is in communication with a gateway switch that facilitates

downlink and uplink transmissions, a plurality of base stations, and other network

elements, for the purpose of allocating spectrum to communications between the base

stations and their associated terminals (Column 7 Lines 8-35, Fig. 4). Each mobile

station may have a FAM which communicates with the aforementioned network FAM for

the purpose of establishing the uplink and downlink frequencies (Column 15 Lines 22-

49).

Claim Rejections - 35 USC § 103

12.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

13.   Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Lucidarme *et. al.* in view of Sawyer, U.S. Patent No. 5,828,737.

Lucidarme *et. al.* discloses the regular measurement by terminals and base

stations of power levels in the telecommunication system (Column 15 Lines 50-62).

Lucidarme *et. al.* does not expressly disclose the estimation of cumulative

equivalent bandwidth of the connections of a terminal.

Sawyer discloses the estimation of total instantaneous bandwidth of a call, over the course of the entire call, in a CDMA cellular telephone system (Abstract, Column 5 Lines 6-54).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Lucidarme et. al. by providing the means for the measurement of total instantaneous bandwidth of a call at the beginning of said call.

One of ordinary skill in the art would have been motivated to make this modification because it would allow the base station involved with the call to always have a tally of the remaining bandwidth available for other terminals.

14.   Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lucidarme et. al. in view of Qureshi et. al., U.S. Patent No. 6,738,351, further in view of Jensen et. al., U.S. Patent 6,421,445.

Regarding Claim 4, Lucidarme et. al. does not expressly disclose the reduction of bandwidth by a specific factor.

Qureshi et. al. discloses a method and apparatus for controlling congestion in packet-based communication networks (Abstract, Column 2 Lines 58-60). A bandwidth reduction factor is used for packet/voice gateway pairs (PVGs) when the amount of call traffic through a given port associated with said PVGs exceeds a threshold (Column 17 Lines 6-20, Column 21 Line 50 to Column 22 Line 39, Figs. 6-8).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Lucidarme *et. al.* by implementing a bandwidth reduction factor when a certain traffic threshold is exceeded.

One of ordinary skill in the art would have been motivated to make this modification because the rationing of system resources (namely, bandwidth) is necessary when demand for said resources exceeds supply of said resources.

Neither Lucidarme *et. al.* nor Qureshi *et. al.* expressly discloses the reduction of bandwidth by a specific factor, wherein said factor is a ratio between an instantaneous quantity and a threshold quantity.

Jensen *et. al.* discloses methods and apparatus for including codes in audio signals (Abstract, Column 2 Lines 1-5), said audio signals possibly modulating radio carrier waves transmitted via satellite (Column 17 Lines 37-50). In determining the appropriate power levels for code tones, broadband noise must be calculated; broadband noise is calculated by multiplying narrowband noise by the ratio of the total bandwidth to the critical bandwidth (Column 22 Lines 35-56).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Lucidarme *et. al.* as modified by Qureshi *et. al.* by setting the bandwidth reduction factor equal to the ratio of the instantaneous value of a variable that is proportional to bandwidth and the threshold value of said variable.

One of ordinary skill in the art would have been motivated to make this modification because an obvious value for the bandwidth reduction factor is a ratio by

which some value of merit (level of traffic, or some quantity that is proportional to bandwidth) exceeds a system limit.

Regarding Claim 5, Lucidarme *et. al.* discloses the availability of different classes of service (*e.g.* different data rates as well as different types of data, such as voice and video) in the telecommunication system (Column 9 Lines 25-26). The recitation "bandwidth reduction is shared between the various connections at random or in accordance with a predetermined hierarchical order." covers the entire range of possibilities. Thus, even though Lucidarme *et. al.* does not disclose the manner in which bandwidth reduction is shared between various connections when bandwidth reduction becomes appropriate, the aforementioned limitation is inherently met by Lucidarme *et. al.*

Regarding Claim 6, Lucidarme *et. al.* does not expressly discloses the process of disconnecting calls from the network when call quality is at a minimum acceptable level.

Qureshi *et. al.* discloses the process of call blocking, wherein a call is not accepted when the call quality starts to degrade due to too many calls being handled simultaneously, that is, when each individual call's bit rate is too low for the desired minimum call quality (Column 2 Lines 28-33, Column 3 Lines 3-14, Column 5 Line 59 to Column 6 Line 9, Figs. 6-7).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Lucidarme *et. al.* as modified by Qureshi *et. al.* as modified by Jensen *et. al.* by providing for the blocking of calls when the bandwidth for calls falls below a minimum threshold.

One of ordinary skill in the art would have been motivated to make this

modification because it is the only way to preserve call quality for some users when

demand for system resources exceeds the supply of system resources, wherein said

system resources cannot be used more efficiently or increased to handle the higher

demand.

Regarding Claim 7, Lucidarme *et. al.* discloses the increasing and decreasing

adjustments of bandwidth, depending on the decision value at any given time and the

decision value threshold (Column 12 Lines 38-65).

15.   Claims 8-9, 11, and 13 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lucidarme *et. al.* in view of Goodson *et. al.*, U.S. Patent No.

5,844,940.

Regarding Claim 8, Lucidarme *et. al.* discloses the presence of a plurality of

terminals sharing the resources and services of the telecommunications system (Fig. 1).

Lucidarme *et. al.* does not expressly disclose the use of a system-wide quantity

equal to the summation of the products of power and bandwidth for each respective

terminal, for the purpose of managing said terminals.

Goodson *et. al.* discloses an apparatus and method for the determination of

transmit power levels by a data communications device so as to minimize the effects of

distortion (Abstract, Column 2 Lines 29-34). A mathematical function for signal to

distortion ratio is disclosed, wherein said function contains a summation of an argument

over a range of frequency values, wherein said argument contains the product of a

power spectral density and a bandwidth (Column 12 Lines 21-61).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Lucidarme *et. al.* by using of a system-wide quantity equal to the summation of the products of power and bandwidth for each respective terminal, for the purpose of managing said terminals.

One of ordinary skill in the art would have been motivated to make this modification because every operational terminal in the telecommunication system places a demand on the communication resources (power transmitted by the base station(s) and /or satellite(s) as well as the total bandwidth capacity) of said telecommunication system, and thus a quantity that is a summation of individual quantities, each individual quantity representing the resources used by one terminal (via the product of its bandwidth and the power used to communicate with it), is useful in managing the resources of said telecommunication system.

Regarding Claim 9, the recitation "reduced uniformly or in a differentiated manner or in a weighted manner" covers the entire range of possibilities of reducing the bandwidth of a plurality of terminals, as the reduction of the bandwidths of the terminals in the group is either unilateral or it is differentiated in some way. Thus, even though Lucidarme *et. al.* does not disclose the manner in which bandwidth reduction is shared between various connections when bandwidth reduction becomes appropriate, the aforementioned limitation is inherently met by Lucidarme *et. al.*

Regarding Claim 11, the recitation "a random or hierarchically predetermined manner" covers the entire range of possibilities. Furthermore, Lucidarme *et. al.* discloses that the decision value is repeatedly calculated, that the bandwidth may be

lowered if said decision value exceeds a certain threshold, and that said decision value

is acceptable once it is below a certain threshold (Column 12 Lines 38-65).

Regarding Claim 13, Lucidarme *et. al.* discloses both the individual and the group

management of the frequency usage of terminals in the telecommunication system

(Column 6 Lines 20-38).

16.   Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Lucidarme *et. al.* in view of Goodson *et. al.*, further in view of Qureshi *et. al.*, further in

view of Jensen *et. al.*

Regarding Claim 9, neither Lucidarme *et. al.* nor Goodson *et. al.* discloses the

reduction of bandwidth by a specific factor.

Qureshi *et. al.* discloses a method and apparatus for controlling congestion in

packet-based communication networks (Abstract, Column 2 Lines 58-60). A bandwidth

reduction factor is used for packet/voice gateway pairs (PVGs) when the amount of call

traffic through a given port associated with said PVGs exceeds a threshold (Column 17

Lines 6-20, Column 21 Line 50 to Column 22 Line 39, Figs. 6-8).

At the time that the invention was made, it would have been obvious to one of

ordinary skill in the art to modify the invention of Lucidarme *et. al.* as modified by

Goodson *et. al.* by implementing a bandwidth reduction factor for a group of terminals

when a certain traffic threshold is exceeded for said group of terminals.

One of ordinary skill in the art would have been motivated to make this

modification because the rationing of system resources (namely, bandwidth) is

necessary when demand for said resources exceeds supply of said resources.

Neither Lucidarme *et. al.*, nor Goodson *et. al.*, nor Qureshi *et. al.* expressly discloses the reduction of bandwidth by a specific factor, wherein said factor is a ratio between an instantaneous quantity and a threshold quantity.

Jensen *et. al.* discloses methods and apparatus for including codes in audio signals (Abstract, Column 2 Lines 1-5), said audio signals possibly modulating radio carrier waves transmitted via satellite (Column 17 Lines 37-50). In determining the appropriate power levels for code tones, broadband noise must be calculated; broadband noise is calculated by multiplying narrowband noise by the ratio of the total bandwidth to the critical bandwidth (Column 22 Lines 35-56).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Lucidarme *et. al.* as modified by Goodson *et. al.* as modified by Qureshi *et. al.* by setting the bandwidth reduction factor equal to the ratio of the instantaneous value of a variable that is proportional to bandwidth and the threshold value of said variable.

One of ordinary skill in the art would have been motivated to make this modification because an obvious value for the bandwidth reduction factor is a ratio by which some value of merit (level of traffic, or some quantity that is proportional to bandwidth) exceeds a system limit.

17.   Claims 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lucidarme *et. al.* in view of Goodson *et. al.*, further in view of Qureshi *et. al.*

Regarding Claim 12, neither Lucidarme *et. al.* nor Goodson *et. al.* expressly discloses the process of disconnecting calls from the network when call quality is at a minimum acceptable level.

Qureshi *et. al.* discloses the process of call blocking, wherein a call is not accepted when the call quality starts to degrade due to too many calls being handled simultaneously, that is, when each individual call's bit rate is too low for the desired minimum call quality (Column 2 Lines 28-33, Column 3 Lines 3-14, Column 5 Line 59 to Column 6 Line 9, Figs. 6-7).

At the time that the invention was made, it would have been obvious to one of ordinary skill in the art to modify the invention of Lucidarme *et. al.* as modified by Goodson *et. al.* by providing for the blocking of random calls when the bandwidth for calls falls below a minimum threshold.

One of ordinary skill in the art would have been motivated to make this modification because it is the only way to preserve call quality for some users, as opposed to allowing all callers to have an unacceptably low call quality (or to not have a communication link at all), when demand for system resources exceeds the supply of system resources, wherein said system resources cannot be used more efficiently or increased to handle the higher demand.

Conclusion

18.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew W. Genack whose telephone number is 571-272-7541. The examiner can normally be reached on FLEX.
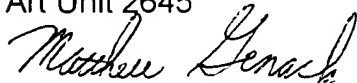
If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Fan Tsang can be reached on 571-272-7547. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

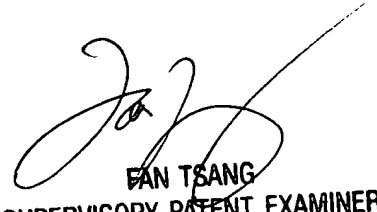Business Center (EBC) at 866-217-9197 (toll-free).

Matthew Genack

Examiner

Art Unit 2645

26 September 2005

FAN TSANG
SUPERVISORY PATENT EXAMINER
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